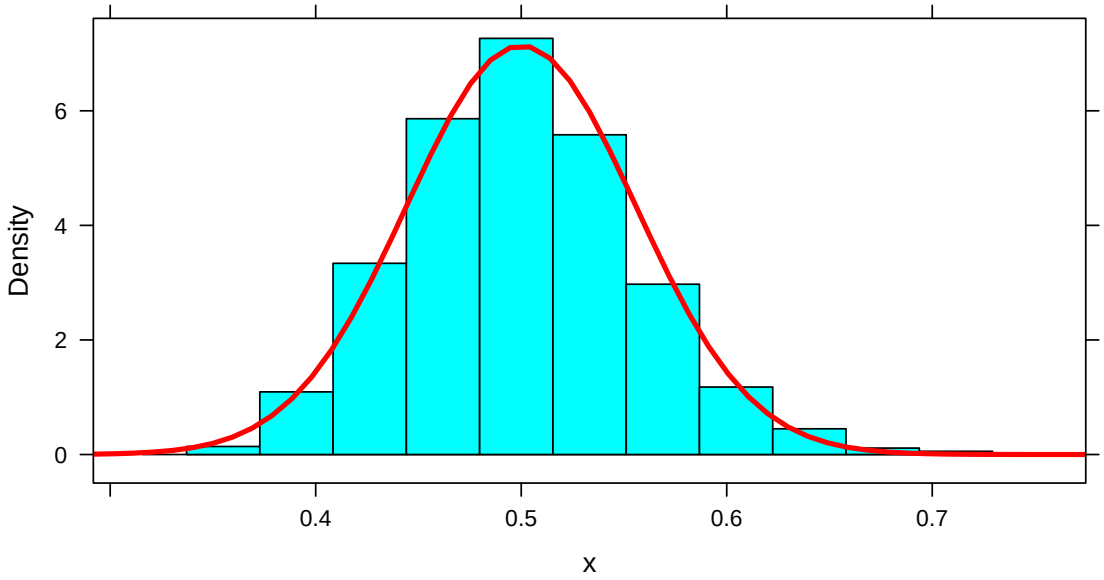
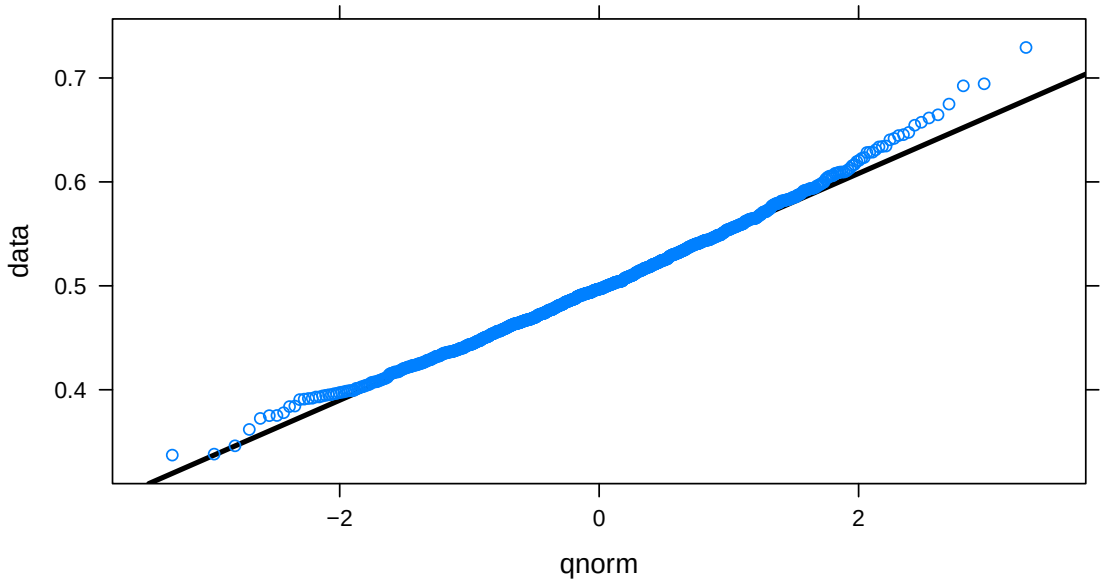
4. Exponential

This Exponential distribution is relatively normal because the histogram follows the normal curve created from the theoretical values of mean and standard deviation. Furthermore the quantile plot is also a nice curve thats follows relatively $y = x$. The best number of samples is at $n = 80$.

n	Sample Mean	Theoretical Mean	Sample Std Dev	Theoretical Std Dev
1	0.486	0.5	0.501	0.500
5	0.497	0.5	0.228	0.224
10	0.501	0.5	0.156	0.158
20	0.495	0.5	0.108	0.112
30	0.491	0.5	0.088	0.091
40	0.506	0.5	0.080	0.079
50	0.500	0.5	0.070	0.071
60	0.500	0.5	0.063	0.065
70	0.498	0.5	0.061	0.060
80	0.500	0.5	0.056	0.056
90	0.501	0.5	0.052	0.053

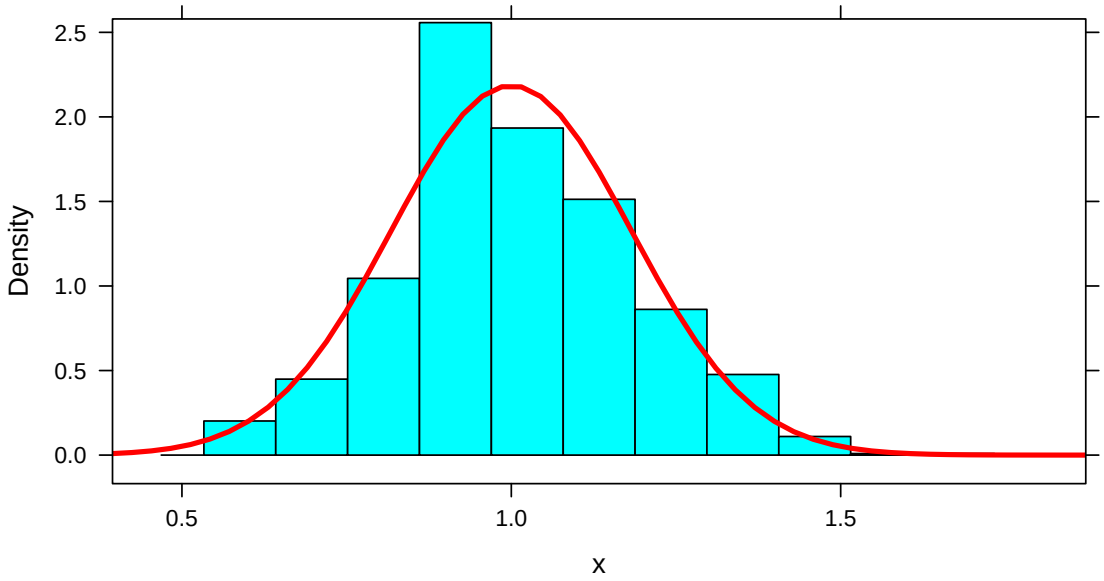


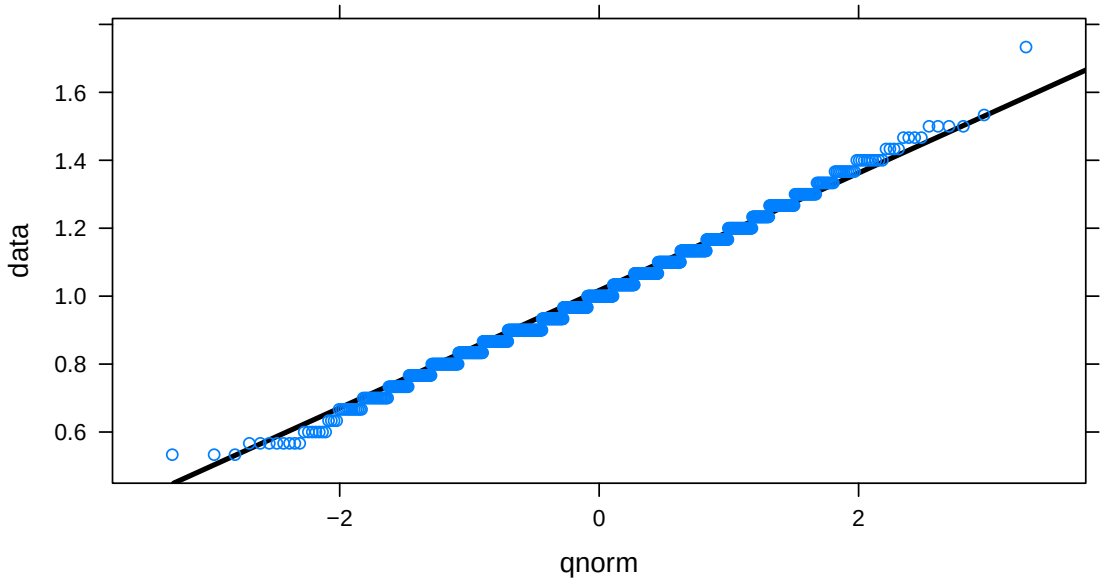


5. Poisson

This Poisson distribution is relatively normal because the histogram follows the normal curve created from the theoretical values of mean and standard deviation. Furthermore the quantile plot is also a nice curve thats follows relatively $y = x$. The best number of samples is at $n = 30$.

n	Sample Mean	Theoretical Mean	Sample Std Dev	Theoretical Std Dev
1	1.024	1.0	0.966	1.000
2	1.004	1.0	0.719	0.707
5	1.003	1.0	0.436	0.447
10	0.991	1.0	0.315	0.316
20	0.991	1.0	0.222	0.224
30	1.006	1.0	0.181	0.183
40	0.997	1.0	0.160	0.158
50	1.012	1.0	0.146	0.141





6. Dice Rolls

This simulation of dice rolls is relatively normal because the histogram follows the normal curve created from the theoretical values of mean and standard deviation. Furthermore the quantile plot is also a nice curve thats follows relatively $y = x$. The best number of samples is at $n = 35$.

n	Sample Mean	Theoretical Mean	Sample Std Dev	Theoretical Std Dev
1	0.182	0.167	0.386	0.373
2	0.349	0.333	0.525	0.527
5	0.837	0.833	0.849	0.833
10	1.664	1.667	1.183	1.179
15	2.488	2.500	1.447	1.443
20	3.273	3.333	1.642	1.667
25	4.115	4.167	1.927	1.863
30	4.996	5.000	2.063	2.041
35	5.868	5.833	2.204	2.205